Remarks/Arguments:

Claims 89-126 and 128-137 are pending, with claims 94-112 and 117-125 having been withdrawn.

Claims 89-93, 113-116, 126 and 128-137 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Takeda et al. (US 2004/0139228, referred to herein as "Takeda01") and in further view of Takeda et al. ("Symmetric NAT Traversal Using STUN," referred to herein as "Takeda02"). This ground for rejection is respectfully traversed for the reasons set forth below.

Claim 89 includes features neither disclosed nor suggested by the cited art, namely:

> ... a bubble packet transmitter for **transmitting the bubble packet** to a destination bubble packet transmitting port of the second communication control unit via the first communication control unit in accordance with the reference port information;
>
> ... a bubble packet transmitting port information receiver for **receiving bubble packet transmitting port information showing the position** of the bubble packet transmitting port;
>
> ... a reply packet transmitter for **transmitting a plurality of reply packets to the bubble packet transmitting port which is shown by the bubble packet transmitting port information via a plurality of reply packet transmitting ports** of the second communication control unit, the plurality of reply packet transmitting ports **including the destination bubble packet transmitting port** ...
> (Emphasis added)

Claims 113 and 126 include similar recitations.

Takeda01 discloses, in Fig. 16A, a communication system including endpoint server 629 and browser 630 connected to IP network 1606 via respective NATs 1602, 1604. (Paragraphs [0190-0191].) Endpoint server 629 and browser 630 communicate with NAT-discovery server 622 to determine the respective address/port pair (for example, respective port IDs, 50012, 49152) via paths 1607A, 1607B.

(Paragraph [0192].) As shown in Fig. 16B, endpoint server 629 can send prediction-based breakout packets (BOPs) from one of its ports to multiple ports of NAT 1604. (Paragraph [0194-0195].) As shown in Fig. 16C, browser 630 can then send a BOP from one of its ports to multiple ports of NAT 1602. (Paragraphs [0199-0200].) As shown in Figs. 19A-19C, Takeda01 teaches that browser 630 sends a single BOP to endpoint server 629, indicated by path 1918. (Paragraphs [0221-0225].)

On page 6 of the Office Action, the Examiner acknowledges that Takeda01 does not teach "a plurality of packets from a plurality of ports of the communication control unit, to a single port." Accordingly, Takeda01 cannot disclose or suggest transmitting a plurality of reply packets to the bubble packet transmitting port via a plurality of reply packet transmitting ports of the second communication control unit, where the plurality of reply packet transmitting ports includes the destination bubble packet transmitting port of the second communication control unit, as required by claim 89. Thus, Takeda01 does not include all of the features of claim 89.

Takeda02, at Section 6.4, relates to port allocation where a symmetric NAT allocates a same port number as its local port number. As shown in TRY listings 1-7, the packets are sent to two ports (3478,3479) which are fixed by the server. In TRY listings 1-4 of Section 6.4, four packets are sent to a different destination from the same internal IP address and port. In TRY listings 5-8, the local port number has changed (from 4136 to 4137). (Sections 6.1, 6.2 and 6.4.)

Takeda02, however, does not disclose or suggest: 1) transmitting a bubble packet (via a first communication control unit) to a destination bubble packet transmitting port of a second communication control unit, 2) transmitting a plurality of reply packets to a bubble packet transmitting port (of the first communication control unit) via a plurality of reply packet transmitting ports (of the second communication control unit), where the bubble packet transmitting port is shown by bubble packet transmitting port information and 3) the plurality of reply packet transmitting ports includes the destination bubble packet transmitting port, as required by claim 89 (emphasis added). Takeda02 does not disclose or suggest transmitting a bubble packet, transmitting a plurality of reply packets and bubble packet transmitting port information, as required by claim 89.

Applicants' claimed invention specifies a transmitting timing (sequence) of transmitting the bubble packet and the reply packets. Specifically, a bubble packet is transmitted and a plurality of reply packets are then transmitted to a bubble packet transmitting port. Takeda02 merely discloses port allocation of NAT, but does not disclose or suggest how these ports are used for transmitting both bubble packets and reply packets and, thus, cannot disclose a specific timing of both a bubble packet and reply packets.

According to Applicants' claimed invention, bubble packet transmitting port information is used to show the position of the bubble packet transmitting port. Accordingly, Applicants' claimed communication system allows for flexible port allocation, where, according to a communication status, the bubble packet transmitting port (to which reply packets are transmitted) can be flexibly decided by the "bubble packet transmitting port information." In contrast, Section 6.4 of Takeda02 discloses only two ports (ports 3478 and 3479), which are fixed by the server.

Applicants' claimed communication system also provides communication directly between terminals. Specifically, Applicants' claimed reply packet transmitter transmits a plurality of reply packets from the second communication control unit to the bubble packet transmitting port of the first communication control unit. Thus, a plurality of reply packets are transmitted and received directly between two terminals, without any server. In contrast, Takeda02 discloses, in Fig. 6.1 "MAPPED ADDRESS" between terminal ap1 and the STUN server, which corresponds to the TRY listing in Section 6.4.

Furthermore, Applicants' claimed plurality of reply transmitting ports includes the destination bubble packet transmitting port. Because the reply packet transmitting ports includes the destination bubble packet transmitting port, the two terminals set up peer to peer communication, based on the bubble packet and the reply packet. This feature is absent from Takeda02.

For the reasons set forth above, Takeda02 does not make up for the deficiencies of Takeda01 with respect to claim 89. Accordingly, allowance of claim 89 is respectfully requested.

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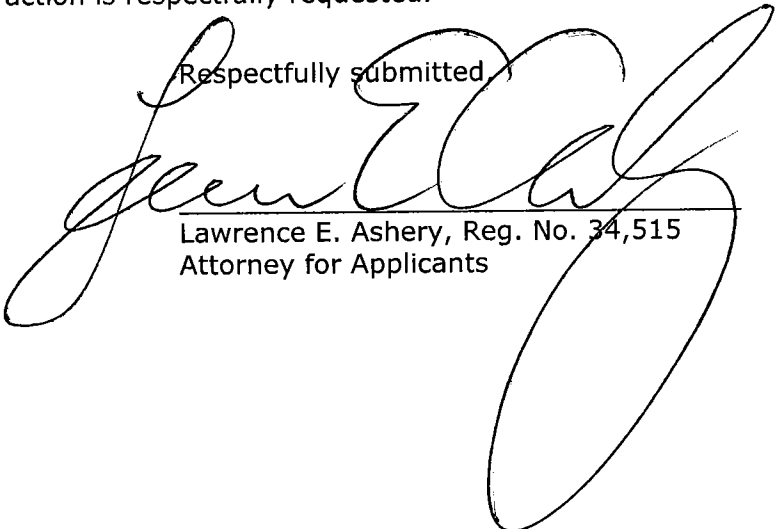
Although not identical to claim 89, claims 113 and 126 include features similar to claim 113 which are neither disclosed nor suggested by the cited art. Accordingly, allowance of claims 113 and 126 is respectfully requested for at least the same reasons as claim 89.

Claims 90-93, 114-116 and 128-137 include all of the features of respective claims 89, 113 and 126 from which they depend. Accordingly, these claims are also patentable over the cited art for at least the same reasons as respective claims 89, 113 and 126.

In view of the arguments set forth above, the above-identified application is in condition for allowance which action is respectfully requested.

Respectfully submitted,

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